

What is Claimed Is:

1. A fold down seat having an automatically actuating ergonomic support system comprising:

5 a seat bottom frame;

a seat back frame, operatively engaged with said seat bottom frame, said seat back frame being movable between a stowed position and at least one other position;

at least one ergonomic support mounted on one of said seat bottom frame or said seat back frame, said ergonomic support having a retracted position and at least one extended 10 position; and

at least one traction cable having a sleeve and a wire disposed to slide axially through said sleeve, a first sleeve end and a first wire end being engaged with said at least one ergonomic support, a second sleeve end being engaged with one of said seat bottom frame or said seat back frame, and a second wire end being engaged with the other of said seat bottom 15 frame or said seat back frame;

whereby movement of said seat back frame from said stowed position applies traction to said traction cable such that said traction cable moves said ergonomic support from said retracted position.

2. The fold down seat having an automatically actuating ergonomic support system of 20 claim 1 further comprising:

a seat bottom base;

at least one support member in elevating linkage with said seat bottom base and said seat bottom frame, said at least one support member mediating travel of said seat bottom frame between a flat position and an elevated position;

said second sleeve end being engaged with one of said seat bottom base or said seat bottom frame, and said second wire end being engaged with the other of said seat bottom base or said seat bottom frame;

whereby movement of seat bottom frame from said flat position applies traction to
5 said traction cable such that said traction cable moves said ergonomic support from said retracted position.

3. The fold down seat having an automatically actuating ergonomic support system of claim 2 wherein said support member is comprised of at least two pivoting legs, each of said legs being hingedly connected to each of said seat bottom base and said seat bottom frame.

10 4. The fold down seat having an automatically actuating ergonomic support system of claim 1, wherein said ergonomic support includes any one of a lumbar support, a thigh support, a lateral bolster and a head support.

5. The fold down seat having an automatically actuating ergonomic support system of claim 4, wherein said lumbar support is comprised of at least two bolsters.

15 6. The fold down seat having an automatically actuating ergonomic support system of claim 5, wherein said at least two bolsters pivot upon extension around at least one vertical member of said seat back frame.

7. The fold down seat having an automatically actuating ergonomic support system of claim 5, further comprising lateral wires attached to each of said at least two bolsters.

20 8. The fold down seat having an automatically actuating ergonomic support system of claim 7, further comprising a flexible wire array mountable on said seat back frame.

9. The fold down seat having an automatically actuating ergonomic support system of claim 8, wherein said lateral wires are operatively engaged with said flexible wire array such that upon said extension of said bolsters, a portion of said flexible wire array is extended.

10. The fold down seat having an automatically actuating ergonomic support system of
claim 9, wherein said portion of said flexible wire array substantially corresponds to the lumbar
spine of a seat occupant.

11. The fold down seat having an automatically actuating ergonomic support system of
5 claim 9, wherein said flexible wire array is disposed between said lateral wires and a seat
occupant.

12. The fold down seat having an automatically actuating ergonomic support system of
claim 4, wherein said lumbar support is an archable pressure surface.

13. The fold down seat having an automatically actuating ergonomic support system of
10 claim 4, further comprising an archable pressure surface in addition to said at least two bolsters.

14. The fold down seat having an automatically actuating ergonomic support system of
claim 4, wherein said lumbar support is a scissors lumbar support.

15. The fold down seat having an automatically actuating ergonomic support system of
claim 4, wherein said thigh support is any one of at least one front thigh bolster and at least two
15 side thigh bolsters.

16. The fold down seat having an automatically actuating ergonomic support system of
claim 15, wherein said at least one front thigh bolster pivots upon extension around a front
member of said seat bottom frame.

17. The fold down seat having an automatically actuating ergonomic support system of
20 claim 15, wherein said at least two side thigh bolsters pivot upon extension around two side
members of said seat bottom frame.

18. The fold down seat having an automatically actuating ergonomic support system of
claim 4, wherein said at least one head support pivots upon extension around a horizontal
member of said seat back frame.

19. An automatically actuating ergonomic support system for a fold down seat comprising:
at least one ergonomic support adapted to mount on one of a seat bottom frame or a
seat back frame, said ergonomic support having a retracted position and at least one extended
position; and

5 a traction cable having a sleeve and a wire disposed to slide axially through said
sleeve, a first sleeve end and a first wire end being engaged with said ergonomic support, a
second sleeve end being adapted to engage one of said seat bottom frame or said seat back
frame, and a second wire end being adapted to engage the other of said seat bottom frame or
said seat back frame;

10 whereby movement of said seat back frame from a stowed position applies traction to
said traction cable such that said traction cable moves said ergonomic support from said
retracted position.

20. The automatically actuating ergonomic support system for a fold down seat of claim
19, wherein said second sleeve end is attached to a pulley housing, said pulley housing being
15 adapted to engage one of said seat bottom frame or said seat back frame, and said second wire
end is attached to a pulley, said pulley operatively mounted in said pulley housing and said
pulley being adapted to engage the other of said seat bottom frame or said seat back frame,
whereby movement of said seat back frame from said stowed position applies traction to said
traction cable such that said traction cable moves said ergonomic support from said retracted
20 position.

21. The automatically actuating ergonomic support system for a fold down seat of claim 19,
wherein said ergonomic support includes any one of a lumbar support, a thigh support, and a
head support.

22. The automatically actuating ergonomic support system for a fold down seat of claim 21,

wherein said lumbar support is at least two bolsters.

23. The automatically actuating ergonomic support system for a fold down seat of claim 22, wherein said at least two bolsters pivot upon extension around at least one vertical support member of said seat back frame.
- 5 24. The automatically actuating ergonomic support system for a fold down seat of claim 22, further comprising lateral wires attached to each of said at least two bolsters.
25. The automatically actuating ergonomic support system for a fold down seat of claim 24, further comprising a flexible wire array mountable on said seat back frame.
- 10 26. The automatically actuating ergonomic support system for a fold down seat of claim 25, wherein said lateral wires are operatively engaged with said flexible wire array such that upon said extension of said bolsters, a portion of said flexible wire array is extended.
27. The automatically actuating ergonomic support system for a fold down seat of claim 26, wherein said portion of said flexible wire array substantially corresponds to the lumbar spine of a seat occupant.
- 15 28. The automatically actuating ergonomic support system for a fold down seat of claim 26, wherein said flexible wire array is disposed between said lateral wires and a seat occupant.
29. The automatically actuating ergonomic support system for a fold down seat of claim 22, wherein said lumbar support is an archable pressure surface.
30. The automatically actuating ergonomic support system for a fold down seat of claim 22, further comprising an archable pressure surface in addition to said at least two bolsters.
- 20 31. The automatically actuating ergonomic support system for a fold down seat of claim 22, wherein said lumbar support is a scissors lumbar support.
32. The automatically actuating ergonomic support system for a fold down seat of claim 21, wherein said thigh support is any one of at least one front thigh bolster and at least two side

thigh bolsters.

33. The automatically actuating ergonomic support system for a fold down seat of claim 32, wherein said at least one front thigh bolster pivots upon extension around a front member of said seat bottom frame.

5 34. The automatically actuating ergonomic support system for a fold down seat of claim 32, wherein said at least two side thigh bolsters pivot upon extension around two side members of said seat bottom frame.

35. The automatically actuating ergonomic support system for a fold down seat of claim 21, wherein said at least one head support pivots upon extension around a horizontal member of
10 said seat back frame.

36. A method of actuating an ergonomic support in a fold down seat comprising:
mounting an ergonomic support on one of a seat back frame or a seat bottom frame;
engaging said ergonomic support with a first end of a traction cable sleeve and a first
end of a traction cable wire;
attaching a second end of said traction cable sleeve to one of said seat bottom frame or
15 said seat back frame;
attaching a second end of said traction cable wire to the other of said seat bottom frame
or said seat back frame.

37. An automatically actuating ergonomic support for a fold down seat comprising:
20 ergonomic support means mounted on a seat back or a seat bottom;
folding means between the seat bottom and the seat back;
actuating means engaged with the ergonomic support means, the seat back and the seat
bottom such that folding the fold up seat actuates said ergonomic support means.

38. The fold down seat ergonomic support of claim 6 further comprising a horizontal

backing rod.

39. The fold down seat having an automatically actuating ergonomic support of claim 1 further comprising an arm rest hingedly attached to side seat back frame and operatively engaged with a second traction cable disposed to automatically present upon said seat back
5 frame being opened.